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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/705,493	11/10/2003	Eric Hamilton	112056-0120	5124
24267 7590 11/28/2007 CESARI AND MCKENNA, LLP 88 BLACK FALCON AVENUE BOSTON, MA 02210			EXAMINER PARDO, THUY N	
			ART UNIT 2168	PAPER NUMBER
			MAIL DATE 11/28/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/705,493

Applicant(s)

HAMILTON ET AL.

Examiner

Thuy N. Pardo

Art Unit

2168

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 May 2007 and 05 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-18, 27-29, 36-40, 42-49 and 58-77 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-18, 27-29, 36-40, 42-49, 58, 59, 62, 63, 65-69, 71, 72 and 74-77 is/are rejected.
- 7) ☒ Claim(s) 60, 61, 64, 70 and 73 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Applicant's Amendment file on May 22, 2007 and Response to Examiner's Office Actions have been reviewed. Claims 12-18, 27-29, 36-40, 42-49, 58-77 are pending in the application. Claims 12, 15, 27, 36, 42, 58, 59, 68, 69 and 77 are independent claims. Claims 1-11, 19-26, 30-35, 41, 50-57, 78 and 79 are canceled, and claims 58-77 are added. This office action is made Final.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 12-18, 27-29, 36-40, 42-49, 58, 59, 62, 63, 65-69, 71, 72 and 74-77 are rejected under 35 U.S.C. 102(e) as being anticipated by Koseki et al. (Hereinafter "Koseki") US Patent No. 6,732,124.

As to claim 15, Koseki teaches the invention substantially as claimed, comprising:

a write allocation process of a file system [log writing unit for repairing a file system when its consistency is lost, see the abstract] , the write allocation process adapted to associated received file data with a buffer data control structure upon receipt of a write operation directed to the file while the file is undergoing write allocation [col. 7, lines 45 to col. 8, lines 36; s2-s9 of fig. 15; acknowledgement, col. 26, lines 6-24].

a consistency point counter used to label modified data as belonging to the current consistency point or the next consistency point [state "Dirty" implies that information the memory has been modified, but the modification has not yet been reflected in the disk storage, col. 20, lines 21-25; S13 of fig. 17; col. 20, lines 12 to col. 21, lines 2], and capturing data modified for the current consistency point in the current consistency point and not capturing data belonging to the next consistency point [col. 22, lines 2-9; write back bitmap blocks to the disk storage, but not applies to control block even if it contains the bit, see col. 21, lines 3-19; S18-S22 of fig. 17; col. 20, lines 21 to col. 21, lines 11].

As to claim 21, Koseki teaches the invention substantially as claimed as specified in claim 15 above. Koseki further teaches:

determining if the buffer is dirty for the current consistency point [S13 of fig. 17; col. 20, lines 12 to col. 21, lines 2];

performing, in response to determining that the buffer is dirty for the current consistency point, write allocation of a buffer associated with the file for a current consistency point [col. 21, lines 3-11]; and

freeing, if the buffer is dirty for the next consistency point, data written during the step of write allocation [S18-S22 of fig. 17; col. 20, lines 21 to col. 21, lines 11].

As to claim 27, Koseki teaches the invention substantially as claimed as specified in claim 15 above. Koseki further teaches:

a flags array having entries for flags associated with a current consistency point and entries associated with a next consistency point [col. 20, lines 21 to col. 21, lines 11];

a first data pointer pointing to a file data associated with the current consistency point [current log write pointer, col. 40, lines 43-55; col. 42, lines 59-63]; and

a second data pointer pointing to file data associated with the next consistency point [col. 42, lines 59-63; col. 43, lines 1-5].

As to claims 12, 30, 36, 40, 42, 50 and 58, all limitations of this claim have been addressed in the analysis above, and this claim is rejected on that basis.

As to claim 10, Koseki teaches the invention substantially as claimed. Koseki further teaches that entries associated with the current consistency point and the next consistency point

are differentiated by performing modulo two additions to a consistency point counter [col. 40, lines 44-62; col. 42, lines 55 to col. 43, lines 23].

As to claim 14, Koseki teaches the invention substantially as claimed. Koseki further teaches that the second pointer in the buffer data control structure points to data already written to the file [col. 42, lines 43 to col. 43, lines 26].

As to claim 45, Koseki teaches the invention substantially as claimed. Koseki further teaches using a monotonically increasing consistency point (CP) counter to identify the current CP as the current value of the CP counter, and the next CP as the value of the CP counter plus 1 [figs. 16 and 20; col. 19, lines 45-56; col. 23, lines 35].

As to claim 47, Koseki teaches the invention substantially as claimed. Koseki further teaches associating the received data with a buffer data control structure by setting a pointer in the buffer data control to a memory location associated with the received data [control flags, symbols, col. 23, lines 25-50].

As to claim 48, Koseki teaches the invention substantially as claimed. Koseki further teaches marking the buffer data control structure as being dirty for a next consistency point by setting a flag in a flag array of the buffer data control structure [fig. 20; col. 23, lines 25-50].

As to claim 49, Koseki teaches the invention substantially as claimed. Koseki further teaches differentiating entries associated with the current consistency point and the next consistency point by performing modulo two additions to a consistency point counter [two concurrent transactions requesting and releasing a resource, or make two or more modifications to a single metadata object, see fig. 19].

As to claim 59, Koseki teaches the invention substantially as claimed. Koseki further teaches receiving data directed to the file system [s43 of fig. 21]; labeling the data as belonging to a current consistency point or to a next consistency point [record transaction activities to current buffer which has sufficient capacity, s44 and s51 of fig. 21]; and allocating disk space for data belonging to the current consistency point, and not allocating disk space for data belonging to the next consistency point [s50-s52 of fig. 21].

As to claims 16-18, 28, 29, 37-40, 58, 62, 65-69, 71, 72, and 74-77, all limitations of these claims have been addressed in the analysis above and in the previous action, and these claims are rejected on that basis.

Allowable Subject Matter

3. Claims 60, 61, 64, 70 and 73 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to claims 60 and 70, the limitations of selecting a time for writing the current consistency point to persistent storage; locating buffer data which has been written to a buffer but which has not been written to persistent storage before the time selected for the current consistency point to be written to persistent storage; and capturing the buffer data into the current consistency point, taken together with other limitations of claim 59, were not disclosed by the prior art of record.

As to claims 64 and 73, the limitations of utilizing modulo-two arithmetic with the CP counter to perform an AND operation using "CP AND 1" to obtain a first value of 0 or 1; and utilizing modulo-two arithmetic with the CP counter to perform an AND operation using "I-(CP AND 1)" to obtain a second value of 0 or 1, to produce flag values alternating between values of "0" and "1" to represent current and next consistency points, taken together with other limitations of claims 59, 62-63, or 69 and 71-72 were not disclosed by the prior art of record.

Claim 61 being further limiting to claim 60 is also objected to.

Response to Arguments

4. Applicant's arguments have been fully considered but they are not persuasive.

Applicant argues that claims 1-20 and 27-29 allows write allocation during CP that result in an "immediate benefit" to client of decreased latency caused by a large number of incoming

write operations that may be queued and suspended while the CP write allocation operation is performed (page 5, lines 10-30).

As to this point, Examiner respectfully disagrees. It is noted that the features upon which applicant relies (i.e., immediate result to client) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant argues that Koseki does not teach marking data as being dirty for a next consistent point.

Examiner respectfully disagrees. It should be noted that Koseki teaches this feature. Koseki teaches a deallocation-dirty flag set to one or zero, the corresponding bitmap blocks on the memory must have new information, meaning that they have to be recorded by the logging system [col. 20, lines 1 to col. 21, lines 11].

Applicant argues that Koseki does not teach writing allocate to file while the file is undergoing write allocation.

Examiner respectfully disagrees. Koseki teaches two concurrent transactions requesting and releasing a resource [see fig. 19; col. 21, lines 45-54].

Applicant argues that Koseki does not teach allocating disk space for data belonging to the current consistency point, and not allocating disk space for data belonging to the next consistency point.

Examiner respectfully disagrees. Examiner believes that Koseki teaches this feature. Koseki teaches that in the process of file system restoration after failure, the log record of transaction A would be replayed later than that transaction B. However, the area allocated to the

transaction B would not be affected by any log record of the transaction A [see col. 22, lines 2-9].

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

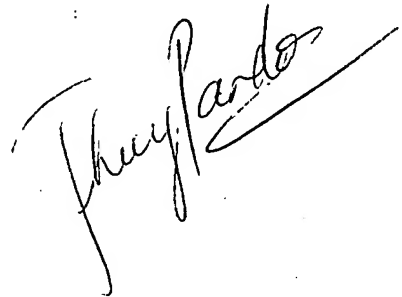
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuy N. Pardo whose telephone number is 571-272-4082. The examiner can normally be reached on Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Vo can be reached on 571-272-3642. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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A handwritten signature in black ink, appearing to read "Thuy Pardo", with a long horizontal flourish extending to the right.

**THUY PARDO
PRIMARY EXAMINER**